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AUTHOR Bruning, Roger H.
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ABSTRACT

Summaries and outlines are presented of key elements in effective teaching identified in research studies by Kounin (1970), Brophy (1973), Brophy and Evertson (1976), Stallings (1974; 1975), Berliner (1979), and Good and Grouws (1979). These elements are synthesized in a direct teaching model that delineates the characteristics of effective teachers: (1) personal responsibility for their classrooms; (2) realistic attitudes toward students; (3) classrooms that are smoothly and almost automatically run; (4) "withitness" (ability to deter disruptive behavior); (5) appropriate seatwork assignments; (6) homework assignments; (7) clearly defined classroom rules; (8) instruction paced according to student background and ability; and (9) praise for students during teacher-initiated contacts. (JD)

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Key Elements of Effective Teaching In the Direct Teaching Model

Roger H. Bruning

University of Nebraska-Lincoln

Some would argue that teaching is simply unanalyzable because of its diverse aims and its complexity. Certainly, many people prefer to consider teaching as an art because a majority of the experiences, emotions, and values in teaching seem to be outside of the realm of scientific inquiry (e.g., Highet, 1957). Others, however, have begun to look more closely from a scientific perspective at the interaction that takes place in classrooms.

Initially, scientific studies provided us with information that merely piqued our interest. For example, we now know as the result of a multitude of observational studies that the typical classroom is strongly teacher-dominated and directed, with ordinarily upwards of 80 percent of the interactions coming from the teacher. Student interaction, in contrast, is quite infrequent but varies widely from student to student and from classroom to classroom. In a several hour span, some students may interact as infrequently as 4 or 5 times, while others have as many as 120 or more interactions. In a typical day, a teacher may have as many as 1000 or more contacts with students.

Other data have been equally provocative: males receive much more criticism from teachers than do females, minority group members receive more negative interactions and fewer total interactions (Civil Rights Commission, 1973), "high expectation" students receive more teacher attention (Brophy, 1983), lower SES students are criticized more (Heller & White, 1975), and attractive students are often the beneficiaries of more favorable judgments from teachers (Ross & Salvia, 1975). Elementary students, Rosenshine's data tell us, work alone about 50 to 70 percent of the time and participate in recitations only a little over 10 percent of the time (Rosenshine, 1979). Students usually spend only about 2/3 to 3/4 of the possible instruc-

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tional time engaged in learning activities (Berliner, 1979), although the time spent varies greatly from classroom to classroom. And while questions have always been a part of the classroom process, their nature has changed very little in this century. About 2/3 of the questions asked by teachers are focused on factual recall of information.

We can look at data such as these with great interest and, indeed, they do provide interesting clues about classroom processes. An overriding concern of many, however, has been with finding those activities and methods that are associated with important *outcomes*. In other words, do some classroom processes lead to more desirable outcomes than others?

Intuitively, we would immediately offer an affirmative answer to this question. Attempts to pinpoint variables that are reliably associated with important classroom outcomes, however, have been noteworthy for their confusion and failure to lead to any set of instructional principles, let alone a *convincing* set of principles. Decades of instructional methods comparisons, for example, left the educational community with little more than a clear idea of the power of Hawthorne-type experimental effects and a belief that the research methods used to study process-product relationships were sadly inadequate to the task (Rosenshine, 1970; Duncan & Biddle, 1974; Good, Biddle & Brophy, 1975).

The judgment that instructional variations made little or no difference that had been or even could be documented persisted well into the 1970's in the educational research community. Large scale research projects such as that of Coleman et al., (1966) and its followups by Mosteller and Moynihan (1972) and Jencks et al., (1972) led many to the conclusion that not only might variations in instructional methods make very little difference, they may have few important effects on learning at all, at least in comparison to social influences such as that of family and socioeconomic status.

In the past 10 years, however, these judgments have been shown to be premature. A large and substantial body of information, based on converging lines of evidence, has provided support for the contention that certain instructional techniques *do* have important effects on the outcomes of learning, most particularly, on the achievement levels of students who experience the instruction. These techniques are based on a view shared by most teachers, administrators, parents, and students—that the teacher is the ultimate instructional decision-maker and leader in the classroom (Rosenshine, 1983). In this perspective, classroom management techniques and effective instruction go hand in hand through good planning, curriculum arrangement, and instruction that keeps students engaged in learning. The approaches collectively are called *direct teaching*, in reference to their emphasis on teacher control over the organization, planning, scheduling, and delivery of instruction.

Kounin's Early Research

The landmark research for this new, optimistic view of the efficacy of instruction is that of Kounin (1970). In a series of studies, Kounin

focused on observations of teachers who were successful or unsuccessful as classroom managers. After an initial discovery in which Kounin found that there was little or no difference in the ability of these two groups of teachers to handle disruptive behavior when it occurred, he began to direct his attention toward the activities of the classroom that lead toward learning and away from disruption. This line of reasoning, based on use of naturalistic inquiry methods to determine differences between groups of individuals, was a method used by several large scale research projects that have led to a much clearer conception of what constitutes effective instruction.

Kounin's research pointed to several important ways that effective classroom managers differed from ineffective classroom managers. The difference came not in their ability to handle disruptions once they occurred, but in problem *prevention* based on good management techniques. Successful managers were successful because they kept their students engaged in productive classroom work most of the time. Their techniques included the following:

1. *Preparation and organization.* Successful managers were much better prepared and organized. Their activity showed clear effects of preplanning.
2. *Smooth transitions between activities.* In contrast to ineffective managers, the skilled classroom managers made smooth, rapid shifts from one classroom activity to the next. The poor managers, on the other hand, were involved in long delays, awkward pauses, and frequent returns to previously given instructions. The ineffective managers showed little in the way of a predictable classroom routine; the effective teachers' classrooms had well-defined routines that were followed each class period.
3. *Overlapping.* The skilled managers showed the capacity to do more than one activity at once without disrupting either. For instance, a group activity would continue while the teacher monitored individuals working on seatwork.
4. *Active student involvement and accountability.* Skilled managers asked more questions and used a less predictable pattern of questions to hold student interest. Students in these classrooms were clearly held accountable for their performance, in contrast to students in poor managers' classes.
5. *Appropriate seatwork.* The good managers selected seatwork that was at an appropriate level of difficulty, neither too hard nor too easy, and chose materials for seatwork that were clearly relevant to the concept covered in the classroom. Ineffective teachers were much less skillful in choosing appropriate seatwork.
6. *"Withitness."* This whimsical name describes a quality that relates to early, correct, and appropriate reactions to potential disruptions. Effective managers were much more skillful in this area than ineffective ones. They did not over-react emotionally, they identified the right

students as problem sources, and they reacted quickly in keeping small disturbances from becoming large discipline problems.

7. *Group alerting.* By a variety of techniques, good managers kept students "on their toes" and alert. The techniques they used ranged from making challenges, to looking around the class and using rigid questioning orders.

The Texas Teacher Effectiveness Project

By mid-decade, another large-scale project had been completed and reported: the Texas Teacher Effectiveness Project (Brophy, 1973; Brophy & Evertson, 1976). This study focused on second and third-grade teachers who had been teaching at their respective grade levels for four or more years. These grade levels were chosen for a variety of reasons, but primarily because at this level it was possible to identify appropriate criteria of teacher effectiveness and to find teachers who showed consistency on these criteria. Another consideration was the teachers' probable effect on young children.

The study focused on the differential ability of teachers to produce achievement in their students. Standardized test scores were selected as the least biased of possible measures of achievement. A singularly important innovation in this study was the identification of teachers who exhibited *consistent* patterns of high or low pupil achievement. Previous studies, as Rosenshine pointed out in his 1970 review (Rosenshine, 1970), almost all had failed to take into account the stability of achievement over time; the inherent instability of short term effects made finding reliable process differences difficult if not impossible. Thus, in the Brophy and Evertson study, achievement gain scores were computed for three years' results in language arts and mathematics sections of the Metropolitan Achievement Tests, statistically adjusted for student ability. Data were selected for the 40 teachers who showed the greatest general consistency; of these, 31 were finally selected for intensive study in the first year and 28 for the second.

Stage two of the Texas project involved classroom observation in the classes of these "consistent" teachers and use of ratings, checklists, interviews, and questionnaires. Observations covered from 10 to 30 hours per teacher per year. The result was a massive body of data; a total of 580 variables were available for analysis. The question of interest, then, was the following: what variables, if any, are reliably associated with consistently high or low achievement?

Brophy and Evertson's results largely confirmed the earlier observations of Kounin. Student engagement in lessons was the key to successful classroom achievement. The successful teachers ran smooth, wellpaced lessons with a minimum of interruptions. Transitions were rapid and activities overlapped with one another in successful teachers' classes. Students of these successful teachers were also provided with more appropriate seatwork on which they

worked more steadily. As Kounin had found earlier, Brophy and Evertson noted that classroom teachers who were successful were more aware of events in the classroom; they were more active and visually checked the classroom more frequently. Successful teachers made fewer errors in blaming the wrong child or in waiting too long to intervene in problem behavior situations. The successful teachers had relatively few rules, but what rules they had were clear and well explained. There were relatively few *ad hoc* decisions to disrupt classroom activity.

The successful teachers also differed on certain personality and attitude dimensions. In contrast to unsuccessful managers, successful teachers believed they were in charge of their own classrooms and that their goals for their classrooms were important. They made it their business to see that students learned; there was a clearly present belief in the ability of their students to learn. The successful teachers viewed their students quite realistically. While they enjoyed being with students, they did not take an overly romantic view of them nor were they negative toward them. Their view, in other words, was likely to be professionally matter-of-fact.

An interesting set of findings related to socioeconomic (SES) differences in students. Successful teachers in high SES classrooms tended to adopt patterns that reduced high levels of competitiveness and sometimes even suppressed certain students' overenthusiastic responding. Occasional negative feedback was given by successful teachers to high SES students. In contrast, successful teachers in the lower SES classrooms adopted a much more highly structured, supportive posture. Teachers who were successful here worked very patiently, waited always for responses, and liberally praised student effort, even if the answers were not completely correct.

Follow-Through Classroom Observation Evaluations

At about the same time, Jane Stallings (Stallings, 1974; 1975) was reporting on the results of a massive study of Project Follow-Through, conducted to evaluate the effects of planned variations among the several instructional models implemented in the Follow-Through project. In this evaluation, four first-grade and four third-grade classrooms were observed in each of 36 towns and cities. A component of this large investigation is of particular interest in the present discussion; namely, how do classroom processes relate to classroom outcome measures, including achievement. In mathematics, several variables related to (1) the opportunity to engage in math-related activity and (2) the amount of time spent learning were positively correlated with mathematics achievement. In reading, the amount of time spent in school and the amount of time spent reading were correlated with reading achievement.

In summary, children who performed well on tests of reading and mathematics were those who were in classrooms where *the most time was spent on developing academic skills*. Several variables combined to create these effects:

duration of the school day, average time each child spent in reading or mathematics or related subjects, and the frequency of academic verbal interactions. (See papers by Egbert & Kluender and Stallings, this volume.) This component of Stallings' research is highly consistent with the findings of the Texas project and the earlier work of Kounin; as time on task increases, as it will in well-organized and smoothly-run classrooms, achievement is likely to increase.

Beginning Teacher Evaluation Study

Berliner (1979) examined the effect that time-on-task has on academic achievement. Since students spend so much of their time in seatwork (Rosenshine, 1979), seatwork is of considerable importance in how much students achieve. Quality, focus, and time spent on seatwork are likely to make a major difference in the amount of achievement that a teacher can expect from his or her students.

In Berliner's research, the aim was to derive an estimate of "academic learning time" per day and per school year. Interestingly, a 150 day school year estimate was used as the basis for judging the total available school days per year, because of the judgment that the standard 180 day school year is significantly shortened by testing, holiday activities, and many other intrusions that commonly compete with instructional time.

Berliner and his associates observed from 74 to 97 days in the various classes. In second grade mathematics classes, the percentages of time engaged in work on mathematics curriculum materials and activities ranged from 61% to 78%. In fifth-grade reading, time spent in reading curriculum and activities ranged from 75% to 84% of available time. When time was estimated for student interaction with low error-rate materials, which promote the highest achievement, a variable called "academic learning time" is the result. Academic learning time is positively related to achievement (Fisher, Filby, Marliave, Cohen, Dishaw, Moore, and Berliner, 1979). In total, the "daily" estimates of academic learning time ranged from 12 to 23 minutes per day in mathematics for the second graders and 24 to 59 minutes per day for the fifth grade classes in reading. Per year the time estimates for academic learning time range from 33 to 58 hours in mathematics, and from 60 to 148 hours in reading. According to this and earlier studies, academic learning time is closely associated with achievement. (See paper by Egbert and Kluender, this volume.)

How does one improve achievement through more academic learning time? According to Gage and Berliner (1979), the most simple and direct method is to allocate more time to academic activities. Teachers vary widely in their ability to use time efficiently, and increased time can usually be found in the school day for academic activities. Several methods are related to more efficient use of time (Gage & Berliner, 1979; p. 629). Among these are clear-cut rules that permit students to make decisions without having to consult their teachers, the teacher's moving around the room to oversee seatwork,

minimizing verbal directions, and perhaps most importantly, selecting seat work that has intrinsic value, is interesting, and is yet at an easy enough level that it insures a high degree of success.

The Missouri Mathematics Effectiveness Study

Good and Grouws, in a 1979 *Journal of Educational Psychology* article (Good and Grouws, 1979) reported on the results of a study in which teachers had been *trained* to implement a program of direct teaching. In this large-scale project involving 40 fourth-grade classrooms, a large number of features uncovered in earlier correlational work on effective and ineffective teachers were incorporated into a systematic training program. The question about correlates of teaching effectiveness was now posed experimentally: Do teachers who have been trained in specific behaviors produce higher academic achievement in their students? The answer, based on the results of this study and now confirmed in several other experimental studies (e.g., Anderson, Evertson & Brophy, 1979; Evertson, Emmer, Sanford & Clements, 1982; Emmer, Evertson, Sanford & Clements, 1982) is almost certainly "yes." The results appear to be quite general for elementary grades up through junior high school.

In the study by Good and Grouws (1979), 40 teachers were divided into two groups. One group participated in two 90-minute training sessions organized around a 45-page manual which described a systematic method for teaching mathematics. Control teachers were instructed to continue in their own instructional methods through the period of the study, which lasted about two and one-half months. In this period, all teachers, experimental and control, were observed six times.

Key instructional behaviors in the model, as outlined by Good and Grouws (1979) and summarized in Good and Brophy (1980) are presented in Table 1. These key behaviors guided the activities of the teachers during the duration of the project.

Table 1

Summary of Key Instructional Behaviors in the Missouri Direct Teaching Model

1. **REVIEW**
   - Review concepts associated with the homework
   - Collect and deal with homework assignments
2. **DEVELOPMENT**
   - Promote student understanding
   - Active interaction
   - Assess student comprehension
3. **SEATWORK**
   - Provide uninterrupted, successful practice
   - Check the students' work
4. **HOMEWORK ASSIGNMENT**
   - Assign every period except Fridays
   - About 15 minutes of work to be done at home
   - Include one or two review problems
5. **SPECIAL REVIEWS**
   - Weekly review for 1/2 period on Mondays
   - Focus on skills learned during the previous week
   - Monthly review conducted every 4th Monday
   - Focus on concepts learned since last monthly review

Results of the Missouri Teacher Effectiveness Project showed a strong relationship of the implementation of behaviors from the model and achievement, as measured by gain scores on the mathematics subtest of a standardized achievement test. Several of the variables that showed relationships to student achievement are shown in Table 2. Most relate directly, as can be seen, to features of the direct teaching model. Conducting review, assigning homework, assigning seatwork, and guiding seatwork all show positive influences on achievement. Equally interesting were data on control teachers' use of these techniques: homework was assigned very infrequently (13%), not often checked (20%), mental computations were not often practiced (6%), and seatwork was not often actively directed at the beginning (43%). The higher degree of implementation by the experimental group teachers after training, however, resulted in substantial changes in student achievement.

Table 2
Selected Actions of Teachers and Mathematics Achievement of Their Students

ACTION	r with ACHIEVEMENT	NOW DOING*
Conduct Review	.37	62%
Develop Concepts During Review	.57	37%
Make Homework Assignments	.49	13%
Check Homework	.54	20%
Work on Mental Computation	.48	6%
Assign Seatwork	.27	56%
Actively Start Student Seatwork	.32	43%

*Percent of teachers in control group performing specified action

SOURCE: Adapted from Good and Grouws, The Missouri Mathematics Effectiveness Project (1979).

As mentioned previously, the features of the Missouri direct teaching model have now been confirmed in a number of experimental studies (see Rosenshine, 1979). This is not to say, however, that all aspects of the model are equally important, that all parts of the model must be implemented in order to achieve success, or that the model covers all important aspects of the classroom organization and management process.

Brophy's Research On Expectations and Use of Praise

Brophy has outlined a number of factors that characterize effective teachers' expectations of themselves and students (Brophy & Putnam, 1979). In general, effective teachers have:

1. Realistic expectations of themselves and students.
2. Enjoyment of students, but within a teacher-student relationship.
3. Clarity concerning roles and behavior and about what will and will not be tolerated.
4. Positive, high expectations of achievement.
5. Positive, high expectations of pro-social behavior, with use of prescriptive information rather than personal criticism as the main method of influence.
6. Consistency of rule enforcement.
7. Patience and determination, in that a goal, once determined for students, is not abandoned.

Expectations of students, however, differ tremendously among teachers in general, Brophy found; his research also has shown that teacher behavior often varies widely depending on the expectations that they hold for given students. Key findings from this research are presented in Table 3. The

results show quite clearly the "natural" tendencies of teachers to select actions based on their beliefs about the ability of their students. Thus, any training program that would maximize its effects would need to take into account such tendencies on the part of teachers to govern their behavior according to their expectations. Questioning, for example, is a key activity in direct teaching, and to the extent that teachers are less effective in questioning with low expectation students, their training would have been incomplete. Similarly, the tendency to praise lows less often and to criticize them more than high expectation students goes directly counter to other findings (e.g., Borphy, 1979) that have shown that low SES students (likely to be over-represented among low expectation students) benefit most from high levels of praise and encouragement, but are less likely to achieve under conditions in which strong support is not present.

Table 3
Teacher Expectations and Teacher Behavior
Toward Low and High Expectations Students

FOR LOW EXPECTATION STUDENTS (LOWS), TEACHERS WILL OFTEN:

1. Wait less time for lows to answer questions
2. Give lows the answer or call on someone else
3. Provide inappropriate reinforcement
4. Criticize lows more than highs for failure
5. Praise lows less than highs for success
6. Fail to give lows feedback on their public responses
7. Interact with lows less and pay less attention to them overall
8. Call on lows less often in class
9. Ask for lower performance levels from lows
10. Smile less, have less eye contact, and have fewer attentive postures toward lows

SOURCE: Adapted from Brophy, J., Research on the self-fulfilling prophecy and teacher expectations (1983a).

Among the many associated findings from the series of studies on teaching have been several on the effective use of praise in the classroom. Many studies of reinforcement made little or no distinction among types of praise that would or would not be effective, as focus was placed on uses of such methods as token systems, group contingencies, and verbal reinforcement as universally applicable in changing behavior. Brophy (1981), in summarizing work from several studies of classroom interventions and achievement, adopts a functional analytical approach to selecting what and what will not constitute effective praise in the classroom. In other words, what kinds of praise have been shown to produce increased achievement and what uses of praise have been shown to be consistently associated with lower levels of achievement? A summary of Brophy's findings is shown in Table 4. As has been emphasized in the behavioral literature, effective praise must be contingent. Praise, in order to be effective, must focus on significant achievement and performance and have a *task orientation*. A major new finding is that effective praise is

seldom public praise. Most effective for increasing achievement is *private* praise, especially that given in teacher-initiated contacts.

Table 4
Guidelines for Effective Uses of Praise in the Classroom

EFFECTIVE PRAISE . . .	INEFFECTIVE PRAISE . . .
1. is contingent	1. is random and unpredictable
2. is spontaneous and genuine	2. is bland, delivered by "formula"
3. specifies the accomplishment	3. is global and untargeted
4. is given for significant achievement	4. is given without regard for effort
5. focuses attention on student performance	5. focuses attention on teacher as authority figure
6. has a within-task orientation	6. has an external orientation
7. is privately given	7. is public and comparative

SOURCE: Adapted from Brophy, J., Teacher Praise: A Functional Analysis (1981).

Summary of Effective Teaching in a Direct Teaching Approach

The mass of correlational studies that laid the groundwork for a much better understanding of the teaching variables that affect student achievement and the experimental studies that have confirmed organizational and interactional variables as critical to achievement have added greatly to our potential ability to develop effective teachers. Although there is much to learn about teaching, it is not unreasonable to say that giant strides have been made in the past decade in understanding the classroom process and the relationship of variables in that process to achievement.

Key elements of the effective teacher's approach within a direct teaching model are summarized in Table 5. They paint a picture of a teacher who is guided by a firm view of what teaching is and what one's goals for teaching might be. They show a teacher who understands his or her students and who possesses a high level of organizational skill and sensitivity to classroom happenings. They indicate a teacher who can select activities for learning that are at an appropriate level for students (see paper by Walter, this volume) and who pays attention to giving students positive feedback on their accomplishments, not for their submissiveness. They also portray a teacher who is sensitive to the social structure of the classroom, using praise in a responsible, private, and nondivisive way to encourage attention to academic accomplishments and to reward true academic achievement.

Table 5
Characteristics of Effective Teachers in a Direct Teaching Model

EFFECTIVE TEACHERS WILL:

1. Have a sense of personal responsibility for their classrooms
2. Have realistic attitudes toward their students
3. Run classrooms that are smooth and almost automatic
4. Have a quality called "withitness"
5. Make appropriate seatwork assignments
6. Make and check homework assignments
7. Communicate clearly defined classroom rules
8. Pace their instruction according to student background and ability
9. Give praise for students during teacher-initiated contacts

SOURCE: Adapted from Kounin, Rosenshine, Good and Brophy (1970-1983).

The experimental studies that have explored elements of a direct teaching model should be most encouraging to those in teacher education, because they clearly hold forth the potential for training preservice teachers in a set of skills that have been shown to relate to students' academic achievement. (See papers by Egbert and by Billups, this volume.) They are soundly based in research. These skills are not mysterious nor are they impossible to learn. In fact, they match well with common sense and one can only wonder at their extraordinary neglect in much of teaching at all levels: elementary, secondary, and postsecondary. At last, however, we seem to have a well-founded body of information at our disposal as teachers of preservice teachers. We now not only have the opportunity to impart it to our students, but to apply this knowledge with good effect in our own teacher-student interactions in our own classrooms.

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